Summary

Assets: circular wing verses straight, shrouded by an envelope, unimpeded by outside forces, lifting capability remains fixed, no downwash or noise, or hazards from exposed spinning blades. ie helicopters.

Size limited only by propulsion/motor capabilities - from solar powered autonomous smaller units to hydrogen/plasma powered high altitude to passenger carrying lifting enveloped vehicles.

Thus, it is the object of the present invention to provide an improved lifting platform utilizing fixed inboard shrouded wings.

I]. CLAIMS

I Claim:

1.0 Vertical Lift Envelope which encompass an enclosed fuselage or storage area, in the shape of a toroid, with guiding cones, mounted in the duct, two counter rotating propulsion units, with circular top wing or wings, a lower airfoil and the complete assembly enclosed with an outer skin.

2.0 Between the upper half of the toroid and the outer saucer skin lies a circular wing, forward leading edge at the inner duct area and trailing edge ending close to the tapered area of the toroid. Air will

be drawn horizontally from the opening ring, situated at the bottom outer edge of the skin, and directed inward, under the toroid, to a lower cone in the duct via two counter rotating fan assemblies are located.

The taper on the toroidal fuselage and the outer skin membrane on both the upper and lower portions of the vehicle will be such that the cubic volume of air/gas will remain constant, starting the toroid and lower duct areas were the volume increases to prevent negative lift being generated when the air/gas mixture flow is forced under the fuselage and when approaching the lower inner cone prior to being compressed again by the pluarity of propellers.

The leading edge of the wing is positioned such that half of the volume of air will be directed over the wing, and half the volume under the leading edge.

Inner design will utilize the inside part of the skin as a high pressure area, top part of the wing as low pressure, where a vacuum will be generated. The underpart of the wing will be a high pressure area and the top of toroid, having a slightly concave surface will be a low pressure area.

Upon the compressed air leaving the trailing edge of the wing and reaching the outermost area of the toroid, the outer skin membrane will be designed to maintain a higher volume of air consequently changing the airflow characteristics from high to low pressure, eliminating negative forces, which would impede lift capabilities. Low density air will be diverted under the toroid , then compressed by the secondary airfoil with a similar designs as the upper wing, causing additional lift, then returned to be reused, thus saving energy.

3.0 Between the inner cone shaped lower duct and outermost lower area of the toroid, the outer skin membrane will be designed to maintain a higher volume of air consequently changing the airflow characteristics from high to low pressure, eliminating negative forces which would impede lift capabilities.

4.0 Vertical propulsion systems will be provided by two counter rotating assemblies , each with a plurality of propellers, mounted within the duct, each assembly has it's own power unit. For more efficiency flow/straightening vanes are mounted between the two counter rotating propeller assemblies. Two engines and rotor assemblies are required to prevent spin and to control or pilot the craft in a set

horizontal direction.

5.0 Turning: Left and right turns will be generated by speeding up or slowing the revolutions on one (1) of propulsion units. including what appears to be reverse flight. As described in 8 of claims.

6.0 Yaw and pitch will be controlled by three nozzles, mounted in a triangular pattern on the outer edge of the skin surface. The nozzles will force compressed air/gas, generated by the propulsion units, to exit vertically upwards or downwards, independently as required to correct yaw or pitch.

7.0 Air Intake/Exhaust Slot. One ring opening mounted on the bottom. lower, outer circumference of the envelope or outer skin structure, and is utilized:

a. to balance the air intake mixture upon demand of the propulsion system.

b. Exhaust air when compression is dropped.

c. Closing of front part of intake slot as forward velocity or movement is generated, to prevent turbulent air reaching the vertical rotor assemblies. Full closure of the complete ring if craft is at high altitude thus negating propeller aircraft problems encountered when operating in thin atmosphere.

8.0 Horizontal flight will be accomplished by a turbine located just aft of the duct, in the storage area or fuselage. Incoming air is drawn in from above the inverted cone, from three ducts and channeled to a central intake prior to the turbine, Compressed air is expelled and split into two exhaust nozzles, giving the craft better stability and control when transferring from vertical to horizontal modes or accelerating in horizontal flight.

Exhaust nozzles are equipped to move the compressed air either upward or downward to prevent this type of vehicle getting into a nose down attitude, as is well known in VTOL type aircraft.

9.0 Reverse flight is accomplished from forward flight by idling the horizontal turbine, rotating the VLE, using one of the two vertical lifting power assemblies and rotating the craft 180 degrees prior to reengaging the turbine, thus stopping the craft in mid flight and moving in the opposite direction.

Thus, it is the object of the present invention to provide an improved lifting platform utilizing fixed inboard enveloped wings